

Having described the invention, the following is claimed:

1. An apparatus for providing inflation fluid to inflate an inflatable vehicle occupant protection device, said apparatus comprising:

a container storing inflation fluid under pressure, said container having an outlet passage through which inflation fluid flows from said container;

a rupturable closure member fixed to said container and blocking flow of inflation fluid through said passage;

a support for said rupturable closure member defining a chamber adjacent said rupturable closure member; said rupturable closure member having a first portion deformed into said chamber by the pressure of the inflation fluid and a second ring-shaped portion encircling said first portion; and

an initiator which, when actuated, ruptures said closure member by shearing said first portion from said second portion.

2. An apparatus as defined in claim 1 wherein said rupturable closure member comprises a flat disk spaced a predetermined distance from an open first end of said support prior to said inflation fluid being introduced into said container.

3. An apparatus as defined in claim 1 wherein said disk is circular and has a central dome-shaped portion comprising said first portion.

4. An apparatus as defined in claim 1 wherein said initiator, when actuated, shears said first portion from said second portion and said inflation fluid acting on said second portion causes said second portion to petal away from said support and open said passage to provide a flow of inflation fluid from said container through said passage.

5. An apparatus as defined in claim 4 wherein said second portion blocks said passage prior to petaling away from said support and opening said passage.

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3. An apparatus as defined in claim 2 wherein said initiator has a base supported by a portion of said container, and said support comprises a hollow member having a second end opposite said open first end supported by said base, said initiator extending into said hollow member.

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B4 7. An apparatus as defined in claim 1 wherein said rupturable closure member is plastically deformed into said chamber and is work hardened due to the plastic deformation.

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B6 8. An apparatus as defined in claim 1 wherein said rupturable closure member has a third portion encircling said second portion and further including a weld connection between said third portion and said container.

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B7 9. An apparatus as defined in claim 1 wherein said open first end of said support includes a circular rim defining an opening into said chamber, said rim having a surface engaging said disk.

10. An apparatus comprising:

a container storing inflation fluid under pressure for inflating said inflatable vehicle occupant protection device, said container having an outlet passage through which inflation fluid flows from said container toward said vehicle occupant protection device;

a rupturable closure member fixed to said container and blocking flow of inflation fluid through said passage;

a support for said rupturable closure member defining a chamber adjacent said rupturable closure member, said rupturable closure member having a first portion deformed into said chamber by the pressure of the inflation fluid and a second ring-shaped portion encircling said first portion; and

an initiator which, when actuated, ruptures said closure member by shearing said first portion from said ring-shaped portion.

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11. An apparatus as defined in claim 10 wherein said rupturable closure member comprises a flat disk spaced a predetermined distance from an open first end of said support prior to said inflation fluid being introduced into said container.

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12. An apparatus as defined in claim 10 wherein said disk is circular and has a central dome-shaped portion comprising said first portion.

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13. An apparatus as defined in claim 10 wherein said initiator, when actuated, shears said first portion from said second portion and said inflation fluid acting on said second portion causes said second portion to petal away from said support and open said passage to provide a flow of inflation fluid from said container through said passage.

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14. An apparatus as defined in claim 10 wherein said second portion blocks said passage prior to petaling away from said support and opening said passage.

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15. An apparatus as defined in claim 10 wherein said rupturable closure member is plastically deformed into said chamber and is work hardened due to the plastic deformation.

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16. An apparatus as defined in claim 10 wherein said rupturable closure member has a third portion encircling said second portion and further including a weld connection between said third portion and said container.

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~~17~~. An apparatus as defined in claim ~~10~~ wherein said inflatable vehicle occupant protection device is maintained inflated for at least seven seconds.

Add A17 Add B97 add S45 add E37

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